

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently amended) A photo-catalyst containing titanium fluoride nitride comprising, $Ti(IV)O_aN_bF_c$ or a compound represented by $MeTi(IV)O_aN_bF_c$ prepared by doping at least one metal Me selected from the group consisting of alkali or alkaline earth metals on $Ti(IV)O_aN_bF_c$, wherein, [b] b is 0.1 to 1, [c] c is 0.1 to 1 and [a] a is a value to maintain $Ti(IV)$ and is decided in relation to [b] b and [c] c.
2. (Original) The photo-catalyst containing titanium fluoride nitride of claim 1 to which at least one promoter selected from the group consisting of Pt, Ni and Pd is loaded.
3. (Original) The photo-catalyst containing titanium fluoride nitride of claim 1, wherein $Ti(IV)O_aN_bF_c$ possesses anataze structure and $MeTi(IV)O_aN_bF_c$ possesses perovskite to anataze structure.
4. (Original) The photo-catalyst containing titanium fluoride nitride of claim 3 to which at least one promoter selected from the group consisting of Pt, Ni and Pd is loaded.

5. (Currently amended) A photo-catalyst for water splitting containing titanium fluoride nitride comprising, $Ti(IV)O_aNbF_c$ or a compound represented by $MeTi(IV)O_aNbF_c$ prepared by doping at least one metal Me selected from the group consisting of alkali or alkaline earth metals on $Ti(IV)O_aNbF_c$, wherein, $[b]$ b is 0.1 to 1, $[c]$ c is 0.1 to 1 and $[a]$ a is a value to maintain $Ti(IV)$ and is decided in relation with $[b]$ b and $[c]$ c.

6. (Original) The photo-catalyst for water splitting containing titanium fluoride nitride of claim 5 to which at least one promoter selected from the group consisting of Pt, Ni, Ru and Pd is loaded.

7. (Previously presented) The photo-catalyst for water splitting containing titanium fluoride nitride of claim 5, wherein $Ti(IV)O_aNbF_c$ possesses anataze structure and $MeTi(IV)O_aNbF_c$ possesses perovskite to anataze structure.

8. (Original) The photo-catalyst for water splitting containing titanium fluoride nitride of claim 7 to which at least one promoter selected from the group consisting of Pt, Ni and Pd is loaded.

9. (Previously presented) A method for preparation of a photo-catalyst represented by $Ti(IV)O_aNbF_c$, wherein a, b and c are

same as to claim 1 by baking titanium di-ammonium fluoride halide represented by $(\text{HH}_4)_2\text{TiF}_d\text{X}_{6-d}$, wherein, d is integer of 1-6, which contains at least F and ammonium halide by the ratio of equimolar or by the ratio of slightly excess of ammonium halide at the maximum temperature from 200 to 500 so as to form a starting material, then said starting material is nitrogenated by thermal synthesis in ammonia atmosphere containing from 0.02% to 10.00% of oxygen, air or water to ammonia by reduced mass to oxygen atom at the maximum temperature from 350 to 700 for over than 5 hours.

10. (Previously presented) A method for preparation of a photo-catalyst represented by $\text{SrTi(IV)}_{0a}\text{NbF}_c$, wherein, a, b and c are same as to claim 1, by baking titanium di-ammonium fluoride halide represented by $\text{TiF}_x\text{X}_{6-x}$ and/or $(\text{HH}_4)_2\text{TiF}_d\text{X}_{6-d}$, wherein x and d are integer of 1-6, which contains at least F and at least one compound selected from the group consisting of SrO , SrOH and SrX so as to form a starting material or SrTiF_6 , then said starting material or SrTiF_6 is nitrogenated by thermal synthesis in ammonia atmosphere containing from 0.02% to 10.00% of oxygen, air or water to ammonia by reduced mass to oxygen atom at the maximum temperature from 350 to 700 for over than 5 hours.

CLAIMS

1. A photo-catalyst containing titanium fluoride nitride comprising, $Ti(IV)O_aNbF_c$ or a compound represented by $MeTi(IV)O_aNbF_c$ prepared by doping at least one metal Me selected from the group consisting of alkali or alkaline earth metals on $Ti(IV)O_aNbF_c$, wherein, b is 0.1 to 1, c is 0.1 to 1 and a is a value to maintain $Ti(IV)$ and is decided in relation to b and c.
2. The photo-catalyst containing titanium fluoride nitride of claim 1 to which at least one promoter selected from the group consisting of Pt, Ni and Pd is loaded.
3. The photo-catalyst containing titanium fluoride nitride of claim 1, wherein $Ti(IV)O_aNbF_c$ possesses anataze structure and $MeTi(IV)O_aNbF_c$ possesses perovskite to anataze structure.
4. The photo-catalyst containing titanium fluoride nitride of claim 3 to which at least one promoter selected from the group consisting of Pt, Ni and Pd is loaded.
5. A photo-catalyst for water splitting containing titanium fluoride nitride comprising, $Ti(IV)O_aNbF_c$ or a compound represented by $MeTi(IV)O_aNbF_c$ prepared by doping at least one metal Me selected from the group consisting of alkali or alkaline earth metals on $Ti(IV)O_aNbF_c$, wherein, b is 0.1 to 1, c is 0.1 to 1 and a is a value to maintain $Ti(IV)$ and is decided in relation with b and c.
6. The photo-catalyst for water splitting containing titanium fluoride nitride of claim 5 to which at least one promoter selected from the group consisting of Pt, Ni, Ru and Pd is loaded.
7. The photo-catalyst for water splitting containing titanium fluoride nitride of claim 5, wherein $Ti(IV)O_aNbF_c$ possesses anataze structure and $MeTi(IV)O_aNbF_c$ possesses perovskite to anataze structure.

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8. The photo-catalyst for water splitting containing titanium fluoride nitride of claim 7 to which at least one promoter selected from the group consisting of Pt, Ni and Pd is loaded.

9. A method for preparation of a photo-catalyst represented by $Ti(IV)O_aNbF_c$, wherein a, b and c are same as to claim 1, by baking titanium di-ammonium fluoride halide represented by $(HH_4)_2TiF_dX_{6-d}$, wherein, d is integer or 1·6, which contains at least F and ammonium halide by the ratio of equimolar or by the ratio of slightly excess of ammonium halide at the maximum temperature from 200°C to 500°C so as to form a starting material, then said starting material is nitrogenated by thermal synthesis in ammonia atmosphere containing from 0.02% to 10.00% of oxygen, air or water to ammonia by reduced mass to oxygen atom at the maximum temperature from 350°C to 700°C for over than 5 hours.

10. A method for preparation of a photo-catalyst represented by $SrTi(IV)O_aNbF_c$, wherein a, b and c are same as to claim 1, by baking titanium di-ammonium fluoride halide represented by TiF_xX_{6-x} and/or $(HH_4)_2TiF_dX_{6-d}$, wherein x and d are integer of 1·6, which contains at least F and at least one compound selected from the group consisting of SrO, SrOH and SrX so as to form a starting material or $SrTiF_6$, then said starting material or $SrTiF_6$ is nitrogenated by thermal synthesis in ammonia atmosphere containing from 0.02% to 10.00% of oxygen, air or water to ammonia by reduced mass to oxygen atom at the maximum temperature from 350°C to 700°C for over than 5 hours.